The Federal Reserve's Dual Mandate: Balancing Act or Inflation Fixation?

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Congress directs the Federal Reserve to manage monetary policy in the United States in order to promote "maximum employment, stable prices, and moderate long-term interest rates."[1] The Fed's public image, however, is an institution whose primary responsibility is to manage inflation, with less direct focus on employment issues. The gulf between the Fed's statutory obligations and its public image is problematic: if the public or other policymakers do not hold consistent expectations about monetary policy objectives, there may be insufficient accountability for policy outcomes. The Fed's response to the recession that followed the 2007-2008 financial crisis prompted greater discussion about that institution's regulatory and macroeconomic management responsibilities.

In this paper, I test two hypotheses about Fed policymaking. I find that in spite of its statutory mandate, Fed policymakers were largely unresponsive to changes in both the inflation and unemployment rates from 1976 to 2011. I analyze Fed policy meeting transcripts and economic data, and find that policymakers talked about inflation more over time, even as the inflation rate fell. Additionally, I find that unemployment was discussed infrequently relative to inflation, and that increases in the unemployment rate were unexpectedly associated with *decreases* in how often policymakers discussed that condition. In sum, I find that the Federal Reserve does not balance its two main objectives, controlling inflation and lowering unemployment, but rather exhibits an *inflation fixation.*

Clark (2013) presents evidence that the Fed is a *conditional* inflation hawk, showing greater concern for inflation under Democratic presidents than under Republican ones. They find that the Fed raises its main policy tool, the federal funds rate, when Democratic presidents are seeking re-election because central bankers have a preference for Republican governments. I find evidence in Fed transcripts that policymakers discussed inflation more frequently under Democratic presidents, which may reflect the justificatory conversations that preceded the partisan policy actions discussed in Clark.

In the next section, I discuss the Fed's policy objectives and a few shortcomings in the political economics literature in this area. I suggest an alternative theoretical framework for estimating a *monetary policy reaction function* that examines policymakers' discussion topics to approximate their stated policy intentions. In this analysis, I also introduce a simple application for automated textual analysis to the study of politics. In Section 3, I discuss my findings and confront possible objections. I conclude by laying out several paths for further research in this area, as well as potential applications for the methodology.

1.1 The Fed's Dual Mandate

Congress created the Federal Reserve System in 1913 to "furnish an elastic currency" and to provide stability to the financial system. At that time, controlling inflation was a peripheral concern to policymakers because they believed that the gold standard was sufficient to stabilize the value of money (Greider 1987). Changes in the domestic and international economies throughout the 20th century, especially the end of gold standard, pushed policymakers to pursue broader objectives.

The Fed's modern policy mandate originated with the Employment Act of 1946, which codified full employment as an explicit goal for the federal government. Congress clarified and extended the mandate to the Fed in 1977 in the Federal Reserve Reform Act: "The formulation

[1] "Federal Reserve Act" (P.L. 63-43), *United States Statutes at Large.* 38 Stat. 251. 12 USC 3

and implementation of monetary policy...shall be governed by the national policy to promote maximum employment, production, and price stability." A year later, lawmakers reaffirmed but reworded the mandate to its current language: "to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates." The employment and price stability objectives are often called the "*dual mandate*", and the balance between the two goals remains central to Fed policy discussion today.[2]

The public image of the Federal Reserve as an inflation-fighter is widespread. A likely source of this perception is related to monetary policymakers' beliefs about how the economy works. A number of economists identify stable and low inflation as a precondition for sustainable economic growth. In his 2005 Senate confirmation hearing as Chairman of the Federal Reserve System, Ben Bernanke affirmed that controlling inflation was vital to achieving monetary policy's other objectives. (Bernanke 2005). Senator John Sununu agreed: "Price stability is absolutely critical." According to this view, low inflation over the long run creates the best environment for strong growth, so the Fed must focus its attention on meeting that mandate first and foremost.

Another belief among economists that justifies the unbalanced approach to the dual mandate is the concept of *money neutrality,* the idea that changes to the money supply cannot affect *real* economic activity. In his comprehensive history of the Federal Reserve System, economist Allan Meltzer said that scholars widely accept that "employment and unemployment rates are independent of monetary actions, so that monetary policy is fully reflected in the inflation rate and the nominal exchange rate" (Meltzer 2010). According to this view, since monetary policy can impact inflation more directly than unemployment, controlling the former should assume top priority. Jeffrey Lacker, the president of the Reserve branch in Richmond, stated this point explicitly in a January 2012 interview: "The Fed does not control growth...Our job is to keep inflation low and stable" (Lacker 2012).

Returning to the language of the statute, a reasonable person could read this section of the Federal Reserve Act and conclude that the institution was meant to balance its objectives by pursuing stable prices and maximum employment with equal vigor. The Congressional mandate to pursue price stability and maximum employment is not preferentially ordered, and any justifications for an unbalanced approach originate independent of the actual statute. The preference toward inflation fighting, espoused in the time inconsistency, inflation precondition, and money neutrality literatures, originates from economists' understanding of the economy, and can thus be thought of as a *value-added* by the agent.

One historically important development in economics that impacted policy significantly was the increased prominence of the monetarist school of economists and improved about the macroeconomy. The monetarists in the mid-to-late 1970s were concerned that economic policymakers were not sufficiently responsive to rising inflation vis-a-vis economic growth. Central to the discussion was the so-called Phillips Curve, introduced in 1958 and subsequently refined by Keynesian scholars Paul Samuelson and Robert Solow in the 1960s, that suggested an inverse and exploitable relationship between inflation and unemployment. Policymakers at the time were encouraged by the model's implications that government policy could reduce unemployment by tolerating slightly higher inflation. In the 1970s, however, some economists began to question the validity of the Phillips Curve as the U.S. economy faced simultaneously

[2] The third mandate (moderate long-term interest rates) is not usually given the same attention in analysis of Federal Reserve policy and politics (Blinder 1996).

high unemployment and inflation. In particular, the monetarist school of economists, led by the University of Chicago's Milton Friedman, argued that there was no long-term tradeoff between the two conditions. Given this prevailing belief among economists at the time, some scholars suggested that the optimal goal for monetary policy was price stability and not maximum employment (e.g. Kydland & Prescott 1977).

1.2 Balancing Act or Inflation Fixation?

In the previous section, I discussed the disparity between the guidelines laid out in the Fed's governing statute and what economists' have deemed the *optimal* monetary policy. Next, I present these two views as hypotheses and propose a means to analyze their relationship to Fed policy.

The Balance Hypothesis: *The Federal Reserve is a neutrally competent institution that is responsive to fundamental economic conditions in line with the dual mandate.*

This hypothesis is consistent with the literature on neutral competence. As Kaufman (1956) summarizes, neutrally competent bureaucrats carry out their work "according to explicit, objective standards rather than to personal or party or other obligations and loyalties." This hypothesis suggests that Fed policymakers follow their Congressional mandate to respond equally to unemployment and inflation, without showing greater preference for either condition. As economists and financial experts, Fed officials given a directive and they interpret and carry it out literally. Neutrally competent agencies, according to Heclo (1975), have a "vested interest in continuity" and thus pursue consistent policies, as well as work to address the expectations of government. According to the hypothesis, the Fed has an incentive to follow a consistent policy regime that is responsive to reasonable expectations to address the key economic problems in a given period. Specifically, the Fed wants to protect, or enhance, its credibility as a neutrally competent institution by reacting to the economy evenhandedly, as instructed by the statute.

The Federal Reserve is an ideal candidate for a neutrally competent bureaucracy: an institution staffed by professional economists, ostensibly removed from partisan politics, and governed by a clear mandate from Congress to promote maximum employment and price stability. The Fed's insulation from politics, according to the *Balancing Hypothesi*s, allows policymakers to pursue their mandated objectives without outside influence or prejudice.

The Fed exhibits elements of Lewis's (2003) four characteristics of bureaucratic insulation: independence, board or commission structure, fixed terms, and qualifications for administrators. The Federal Reserve is a creature of Congress but has an independent budgeting process, and [3] although policymakers are required to report semiannually to Congress, their specific monetary policy actions are exempt from external approval. Additionally, although the President appoints Governors to the Fed, with Senate confirmation, Fed officials cannot be removed without cause. These various measures of independence create distance between the executive and legislative branches and the Fed, so that the neutrally competent monetary policymakers can take action without formal political pressure. Lewis (2003) specifically recalls the creation of the Fed as an example of policy-by-committee in order to insulate the agency

[3] The Federal Reserve System finances its operations with interest earned on its portfolio of assets, and routinely returns the excess profits to the Treasury Department.

from political influence. Decision-making by a board or commission reduces the possibility that a single individual can be politically pressured to affect policy outcomes. Fed Governors are also insulated from politics because they serve fixed terms of 14 years. Since Fed officials serve such long terms, and cannot be removed without cause, the President's opportunities to influence the Fed through appointment are rare. Lastly, the Federal Reserve Act specifies qualifications for Fed appointees that limit *presidential discretion*. Section 10 of the Federal Reserve Act requires the President to ensure "fair representation of the financial, agricultural, industrial, and commercial interests, and geographical divisions of the country" when appointing Fed Governors.[4]

The *Balance Hypothesis* suggests that Fed uses its independence to expertly balance maximum employment and price stability, as Congress plainly mandates in the statute. The alternative to this hypothesis grants the Federal Reserve the very same independence, but suggests policymakers use this independence to pursue their own understanding of what the best monetary policy is, the actual statue notwithstanding.

Inflation Obsession Hypothesis: *The Federal Reserve uses its political independence to implement policy according to its belief that price stability is a precondition for maximum employment.*

This hypothesis is consistent with much of the central bank independence literature. Several scholars have found that lower inflation is associated with independent central banks (i.e., Bade & Perkins 1982, Rogoff 1985). Alesina & Summers (1993) summarize, "Insulating monetary policy from the political process...helps enforce the low inflation equilibrium. Without some degree of political independence, it would be impossible to appoint [an inflation averse] central banker...which is a socially desirable goal." The Fed's independence allows it to pursue anti-inflationary monetary policy despite the neutrality of the ruling statute. This hypothesis relies on a flexible version of *goal independence* discussed by Debelle & Fischer (1994), in which the central bank is free to set its own policy objectives. The "*dual mandate*" rules out complete goal independence for the Fed, but the *Inflation Obsession Hypothesis* suggests that the Fed shows greater concern for price stability than maximum employment, according to the institution's understanding of both conditions. The Fed uses its independence to re-interpret the "*dual mandate*" such that price stability is a precondition for maximum employment. In this sense, the Fed's fixation on inflation resembles a *hierarchical mandate,* resulting in policy outcomes that are more responsive to one economic condition (inflation) than the other (unemployment).

In the next section, I propose a new framework for testing the Fed's responsiveness to the economic conditions under its mandate.

1.3 Research Design: The Textual Reaction Function

In order to test whether the Federal Reserve follows a balance or fixated interpretation of its mandate, we would like to test policymakers' responsiveness to changes in the underlying economic conditions in the economy. Conceptually, this task has been done before in the field of

[4] Strict Adherence to this requirement is doubtful. A quick look at the list of past Governors reveals fewer farmers and labor leaders than bankers and academic economists.

monetary policy reaction functions. The most well-known reaction function is the so-called Taylor Rule, introduced by Stanford economist John B. Taylor (1993), which used changes in the Fed's main policy tool, the federal funds rate, and deviations in inflation and output data to parse out the weights that policymakers' assign to each objective. I find two key flaws with this technique applied in a political science setting.

First, the institutional weights for each objective are parsed from estimates of economic data based on assumptions about policymakers' goals. For example, a common version of the Taylor Rule uses the deviation of inflation from a 2% target and the shortfall between potential and actual output. Putting aside the validity of that particular specification, this type of monetary policy reaction function presupposes an explicit target for inflation and uses the output gap instead of civilian unemployment. The Taylor Rule includes value-added by economists, and a politics-minded specification should return to the guidelines of the original statute.

Second, the federal funds rate, the Fed's main tool for monetary policy, is an imperfect dependent variable. The Fed has deployed several different tools to execute policy over the past hundred years. Within the scope of this analysis, 1976 to 2007, the Fed used various reserve requirements as well as adjustments to the discount rate in addition to moving the federal funds rate. Reaction functions like the Taylor Rule fixate on the policy outcome (that is, the movement of the policy tool) instead of the policymakers' intentions and such analyses run the risk of ignoring policy actions that take place outside of the main channel.

In order to mitigate these shortcomings in the traditional reaction function estimates, I look directly at policymakers' intentions instead of their policy outcomes. I analyze transcripts from the Federal Reserve's policymaking meetings between March 1976 and December 2007 to measure attentiveness to inflation and unemployment.[5] Specifically, I employ automated text analysis to calculate the frequency of the words "inflation" and "unemployment" at each meeting.[6] Text analysis is not unfamiliar to political scientists: other scholars have used the technique to discern policy preferences from political documents (e.g., Gabel and Huber 2000), and Grimmer (2013) recently discussed its specific application to political science research.

In addition to using policy discussions instead of policy tool changes to policymakers' intentions, I also replace the output gap variable in the Taylor-Rule with the civilian unemployment rate. The output gap, the different between the actual and potential GDP, and is an indirect measure of employment. Consistent with the discussion above regarding the value-added by economists, my model considers the economic variable that more closely matches the original language of the Federal Reserve Act. The 1978 statute reads "maximum employment", the 1946 statute calls for "full employment", and a reasonable, albeit admittedly literal, reading of the dual mandate justifies measuring unemployment directly.

Figure 1 shows the expectations for the Fed's responsiveness to its mandates, according to the Balance Hypothesis.

[Figure 1 about here]

Pi is the annual inflation rate, U is the monthly unemployment rate, I* is how often inflation is discussed, and U* is how often unemployment is discussed. According to the Balance Hypothesis, the Fed is equally concerned with fulfilling its dual mandate and we expect it to be responsive to deviations in either measure. In figure 1, as the inflation rate increases, I expect

[5] The Fed's policy body meets roughly every 4-6 weeks, and transcripts of policy discussions are available from March 1976 to December 2007 at www.federalreserve.gov.

[6] I analyze 325 transcripts in total.

policymakers will discuss inflation more and unemployment less. I expect to find similar effects for unemployment if the Fed balances its objectives.

I estimate the following regressions based on the Balance Hypothesis, where I* is the frequency of the word "inflation" (per 10,000 words), U* is the frequency of the word "unemployment", Date is a variable that controls for exogenous increases in total word count over time, Inflation is the mean-centered annual inflation rate as measured by the Personal Consumption Expenditure index, and Unemployment is the mean-centered monthly civilian unemployment rate.[7]

$$I* = \beta_0 Date + \beta_1 Inflation + \beta_2 Unemployment \quad (1)$$

$$U* = \beta_0 Date + \beta_1 Inflation + \beta_2 Unemployment \quad (2)$$

If the Balance Hypothesis is correct, the coefficient on the inflation variable in equation (1) should be positive and statistically significant. Likewise, the coefficient on the unemployment variable should be negative and significant. The reverse is expected for equation (2). If the Inflation Fixation Hypothesis is correct, however, then I expect to see coefficients that are of the opposite direction as above, or indicate no effect.

2.1 Results

Two main findings emerge from my analysis. First, there is no evidence that Fed policymaking discussions track economic conditions. Second, inflation verbiage dominates unemployment throughout the dataset. I show these findings two ways: first analytically, then graphically. Table 1 shows the results from the regression analysis of equation (1) above:

[Table 1 about here]

The coefficient on the Inflation variable in model #1 is positive, but small and statistically insignificant. The coefficient on the unemployment variable matches our expectations: as the inflation rate increases one standard deviation above its mean, Fed policymakers spoke less frequently about unemployment. Table 2 shows the results from the regression analysis of equation (2):

[Table 2 about here]

The coefficient on the inflation variable matches our expectations: negative (although small) and statistically significant. The results for the unemployment variable were unexpected, however. When the unemployment rate rose by one standard deviation above its mean for the period, Fed policymakers actually spoke *less* frequently about that condition.

Figure 2 shows graphically the lack of association between economic conditions and word frequencies. The frequency with which Fed officials discussed inflation increased dramatically over time (bottom left), even as the inflation rate steadily declined (top left). Discussion about unemployment did not track the unemployment data and remained infrequent throughout the time period (right side).

[7] PCE is the Federal Reserve's preferred measure of inflation because it closely tracks the cost-of-living, but downplays volatile inputs such as energy and food. I estimated the same equation with the consumer price index (CPI, also known as "headline inflation") and the results were substantively unchanged.

[Figure 2 about here]

According to these results, the Fed's policy discussions were barely responsive to changes in inflation and they reacted unexpectedly to changes to unemployment. Another interesting finding emerged when I compared the frequency of inflation discussion versus unemployment discussion. The two bottom graphs in Figure 2 show the frequency of the words "inflation" and "unemployment". Inflation dominated unemployment in nearly every period. The discussion about inflation increased over time, independent of the actual inflation rate, and unemployment discussion appears to have been anemic. I discuss a few explanations and alternative interpretations of these results in Section 3.

2.2 Extension: The Democratic President Effect?

To extend this analysis beyond responsiveness to economic conditions, I look to a recent piece by Clark (2013) with evidence for the Fed being a *conditional* inflation hawk under Democratic Presidents. The authors suggest that the Federal Reserve has partisan preferences for which party occupies the White House and that it implements policy (raises or lowers interest rates) in order to help or hurt re-election seeking incumbents. Specifically, they find evidence that the Fed is more responsive to inflation under Democratic presidents and thus more likely to raise interest rates before the incumbent's re-election.

Although I purposefully do not incorporate the Fed's interest rate tool in my analysis, I can test the Fed's attentiveness to its dually mandated objectives under Democratic Presidents. I estimate the original regressions with a variable for the party of the President:

$$I *= \beta_0 Date + \beta_1 Inflation + \beta_2 Unemployment + \beta_3 Democrat \quad (3)$$

$$U *= \beta_0 Date + \beta_1 Inflation + \beta_2 Unemployment + \beta_3 Democrat \quad (4)$$

Model #2 in Table 1 above shows the results after accounting for the party of the President. Democratic President is a dummy variable that equals 1 if the President is a Democrat and 0 otherwise (in this case, only Republicans receive 0). According to my estimate with equation (3), the Fed talked more about inflation under Democrats than Republicans. The interpretation of the coefficient is as follows: under Republicans, the Fed only discussed inflation twice (per 10,000 words) per meeting (although this result is statistically insignificant). In contrast, under Democratic presidents, the Fed mentioned inflation nearly twelve times (per 10,000 words) per meeting on average.

Table 2 shows the Democratic President Effect on the frequency of "unemployment", specified in equation (4). Under Republican presidents, the Fed mentioned unemployment a little over five times (per 10,000 words) per meeting, and over eight times (per 10,000) under Democrats. These estimates hint at support for the conclusion in Clark (2013): the increase in the frequency of discussion about inflation under Democrats, controlling for the actual economic conditions, may reflect justificatory discussions that policy makers had prior to raising interest rates. Interestingly, the intercept term for model #2 in Table 2 also supports Clark's finding that the Fed was more responsive to slow growth under Republicans.

Clark analyzed data going back to the Eisenhower administration, but this analysis only covered six Presidents (Ford to G.W. Bush). I hesitate to stretch my dataset and methods so far as to claim definitiveness in my findings, but nevertheless it is worth noting that my results

corroborate increased attention to inflation (unemployment) under Democratic (Republican) Presidents.

3 Discussion

The findings in my original regression analysis show that the Fed's attentiveness to inflation was barely, if at all, related to the actual inflation rate. Additionally, I found that policymakers spoke more frequently about inflation over time even as the inflation rate fell. My analysis of unemployment discussion frequency found that the Fed was similarly unresponsive to changes in the data, and that unemployment remained under-discussed relative to inflation throughout the set. In the next section, I discuss one possible explanation for the Fed's inflation fixation and acknowledge objections and alternative explanations.

3.1 Policy Inertia and Inflation-Fighting

One plausible explanation for the unexpected rise in inflation discussion over time as the inflation rate fell is related to goal monitoring and affirmation. My dataset begins in the mid-to-late 1970s, a period of historically high inflation, and a time in which the institutional culture of the Fed was shifting away from the Keynesian notion that policymakers could exploit higher inflation in order to lower unemployment, toward the monetarist principles of inflation fighting. Anti-inflationary policy attitudes took hold by 1979, when President Jimmy Carter appointed Paul Volcker, a vocal monetarist, to chair the Federal Reserve. Volcker believed that inflation was tied to concerns about long-term interest rates and that the Fed lacked the credibility to lower inflation expectations without a hard line policy.[8] Volcker quickly set about reforming the Fed's operating procedures to fight inflation more effectively. New policy tools emerged as economists' collective attention shifted to controlling inflation. The Fed adopted a laser focus on the growth of money[9], raised the discount rate and reserve requirements for banks in order to slow lending, and allowed interest rates to rise.

Future research should further explore the idea of policy inertia at the Fed during and after the so-called Volcker Disinflation. Pierson (2000) argues that policymakers pursue a particular policy path when they perceive increasing returns from continuing the policy, as opposed to some other alternative policy. According to an analysis of Fed transcripts by Goodfriend (2005), Fed officials were chiefly concerned with re-establishing the institution's credibility to protect the value of the nation's money. The Fed quickly implemented sharp interest rate increases and introduced money aggregate targets to bring inflation under control by 1980. With inflation slowly inching downward, and political concerns about rising unemployment pressuring the Fed to ease policy, Chairman Volcker refused to change course. The Federal Reserve saw an opportunity to restore its credibility as an independent and effective institution, and the Fed stuck to its anti-inflation policies (FOMC 1979). In the economics language borrowed by Pierson, the Fed perceived "increasing returns" for its public image by

[8] See Goodfriend (2005) for a detailed analysis of the Volcker Disinflation.

[9] The Federal Reserve's main policy tool since the 1980s has been the Federal Funds Rate, the interest rate at which reserve banks lend to one another overnight. In addition to targeting interest rates, the Fed experimented with manipulating reserve requirements, money supply growth targets, and the discount rate (the rate at which banks can borrow from the central bank.)

remaining tough on inflation. This inflation fixation never fully left the Fed, and staying the course ensured inflation-fighting would be the main goal of the Fed for the next three decades.

3.2 Narrative Evidence of Inflation Fixation

Historical evidence supports the statistical findings presented above. Bob Woodward's popular book on the Federal Reserve under Alan Greenspan provides narrative evidence the Fed grew increasingly concerned about inflation in the late 1990s precisely *because* it was so low. In the middle of an economic boom, policymakers grew anxious that large price increases were around the corner. Although not likely representative of the data set, this anecdote supports my findings that the Fed's *attention paid* to inflation was not related to the actual rate of inflation, but rather stoked by nervousness that the institution's inflation fighting prowess could be tested at anytime (Woodward 2000).

Woodward's account of the Greenspan Fed also touches on an economics concept that dominated the intellectual culture there in the 1990s, known as NAIRU, the non-accelerating inflation rate of unemployment. In the midst of an economic boom, policymakers were worried that if inflation was arise if the unemployment rate fell below the NAIRU level. Again, this historical study of policymakers' beliefs may help explain the unexpected result in Table 2: when the unemployment rate decreased by one standard deviation from the mean, policymakers discussed the unemployment rate more frequently. As the rate approached the NAIRU, policymakers grew more nervous, and talkative, about the implications for inflation-fighting, their primary objective.

There are a few reasonable objections to my findings that need to be addressed at the next stage of my research. An obvious concern is that the words "inflation" and "unemployment" do not perfectly capture all references to the phenomenon. Neither word actually appears in the Fed's statute, although I argue that unemployment is a better literal read of the statute than the output gap in the Taylor Rule. This objection is a reasonable one. Although "inflation" is the household word that many Americans and public officials use to describe "price stability", there are other phrases that policymakers could have used to signify attentiveness to rising prices. For example, in the late 1970s and early 1980s, the Fed paid close attention to and set targets for the growth rate of monetary aggregates (a measure of the money supply). Officials may have discussed the 12% inflation rate in terms of the growth rate of some other variable, such as money supply, wages, or prices. The convenience of automated text analysis is that word frequencies (and eventually other analytics) can be obtained for any given word, phrase, or text corpora. Future research should focus on classifying language related to other objectives. In addition to the above inflation-related words, one could similarly group words such as workforce, jobs, and labor to better identify attentiveness to "maximum employment".

3.3 Summary

In this paper, I have identified a disparity between the statutory objectives that Congress assigns to the Federal Reserve and the public image of the Fed's responsibilities. Using text analysis of policy meeting transcripts and OLS regressions with economic data, as well as a new theoretical framework for a *textual reaction function,* I find:

1. No support for the Balance Hypothesis, and some support for the Inflation Fixation hypothesis

2. Between 1976 and 2007, the Fed's policy discussions about a particular economic condition were not related to the actual data on that condition. In spite of its dual mandate, the Fed's conversations were unresponsive to changes in economic conditions.
3. The Fed paid greater attention to inflation over time, even as the inflation rate fell. Attentiveness to unemployment was largely unchanged across the data set.
4. The Fed paid greater attention to inflation than unemployment on average.
5. The Fed was more attentive to inflation when the President was a Democrat.

There are several areas for improvement in future research. Advances in computer science, especially text analysis and topic modeling, have promising applications for social scientists interested in large bodies of text. This paper employs a very simple application, word frequencies to track discussion topics. Future projects might explore this technology further by expanding the dataset and programming code to include more materials and search terms, or by implementing techniques to classify texts with similar attributes. For example, the Fed has recorded its `policy actions in several formats over the past century in addition to the transcripts used here. If this project were to include all such materials, it would be helpful to sort documents automatically by type based on unique characteristics.

Expanding the data set back in time would also allow for a larger sample of Presidents, Congresses, and other political bodies that may have interacted with the Fed across time. An earlier version of this project estimated the marginal effects of each Fed Chairman on word frequencies. But it was too difficult to draw any credible conclusions from the sample of five individuals, including two split terms (Burns and Bernanke).

A pilot version of this project analyzed the Federal Reserve's Annual Reports to Congress from 1978 to 2011 and found support for similar conclusions about the institution's inflation fixation. One striking difference, however, was that Fed started to pay attention more attention to unemployment after 2007. As the unemployment rate rose during the financial crisis and recession, the Fed spoke up about unemployment unlike it had done in any other downturn in the past thirty years. Unfortunately, Fed transcripts are released with a five year lag, so we will not have a full understanding of this institution's political evolution for quite some time. It is encouraging, however, to speculate about the advances in text analysis that can be brought to bear on each successive set of new transcripts.

4 Conclusion

In this paper I showed that there is no evidence in the aggregate that the Federal Reserve balances its inflation and unemployment objectives from 1976 to 2007. There is little evidence that the Fed was responsive to the fundamental economic conditions outlined in its Congressional mandate. In fact the graphical and analytical evidence suggests that the Fed was decidedly more focused on inflation during the observed time period. Future research should focus on improving the methods of text analysis, expanding the text corpora to include minutes, records of policy action, and other transcript-like records, and identifying other political and economic variables that may influence how the Fed balances its dual mandate.

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Figures & Tables

Figure 1: Expected direction of effects of economic conditions on policy discussion

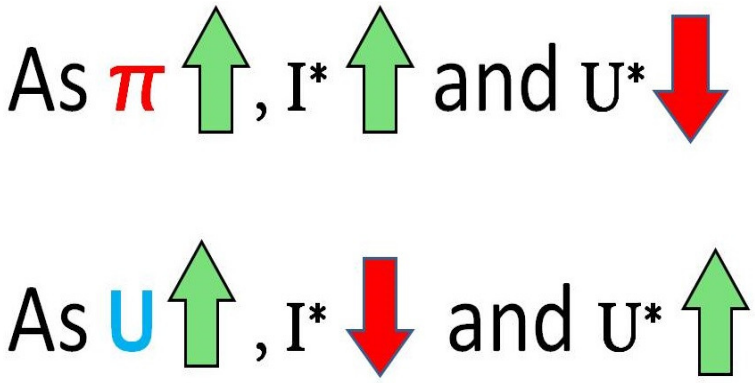

Figure 2: Economic Conditions and Word Frequencies in Fed Transcripts, 1976-2007

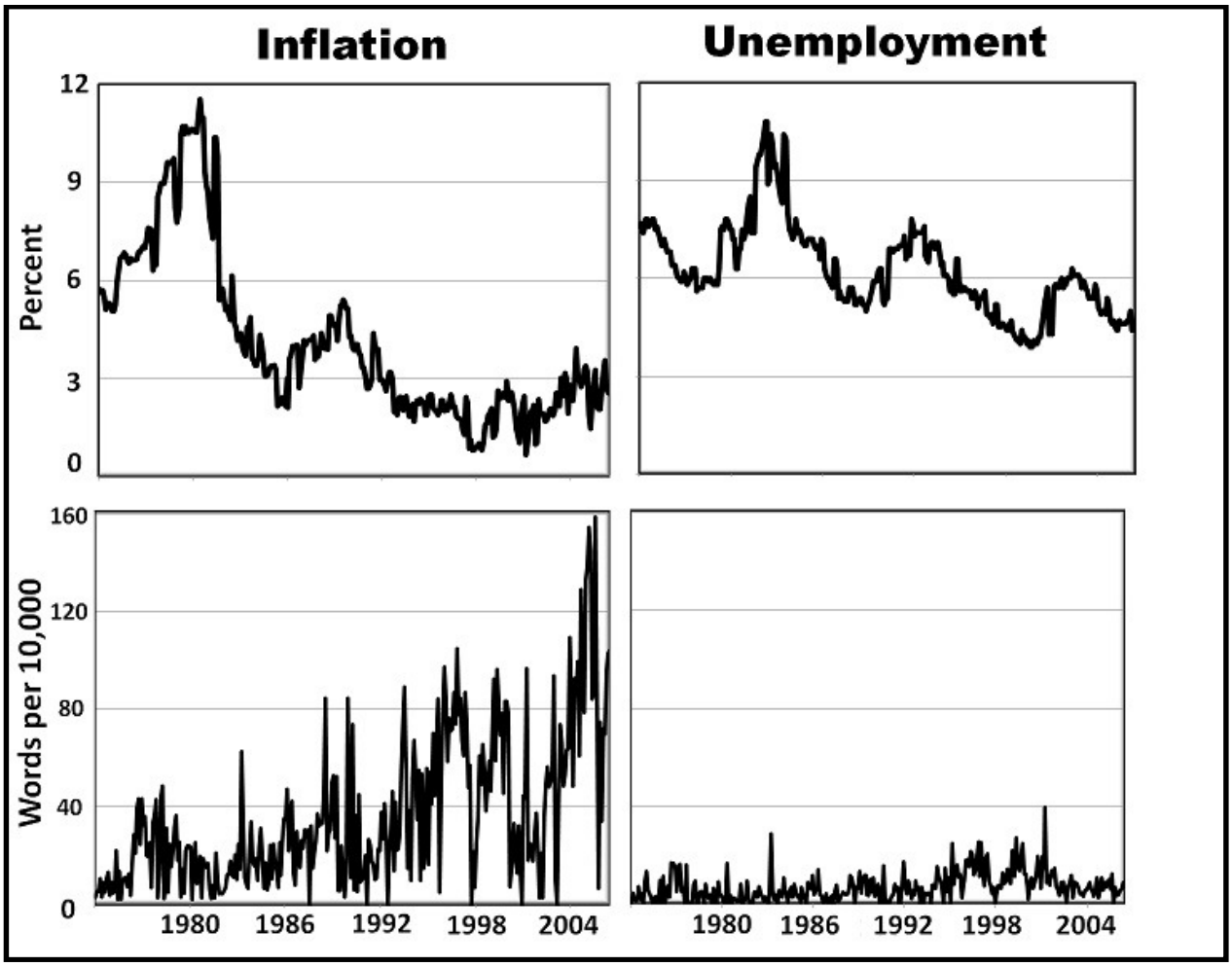

Table 1: Relationship between macroeconomic conditions and policymakers' attention to inflation, conditional on the party of the incumbent president.

	Model #1	Model #2
Date	0.15*	0.17*
	(0.02)	(0.02)
Inflation	1.15	1.10
	(.80)	(0.79)
Unemployment	-5.40*	-3.37*
	(1.25)	(1.39)
Democratic President		9.79*
		(3.05)
Intercept	9.86*	1.86
	(4.17)	(4.81)
Adjusted R^2	0.42	0.43
N	325	325

Notes: Dependent variable for the regression analysis is the number of occurrences of the word "inflation" per 10,000 words in Federal Reserve transcripts.

Significance levels: * $p < .05$, two-tailed *t*-test

Table 2: Relationship between macroeconomic conditions and policymakers' attention to unemployment, conditional on the party of the incumbent president and the Fed Chairman

	Model #1	Model #2
Date	-0.004	0.003
	(0.005)	(0.005)
Inflation	-0.65*	-0.66*
	(0.19)	(0.18)
Unemployment	-1.39*	-0.78*
	(0.29)	(0.32)
Democratic President		2.94*
		(0.70)
Intercept	7.71*	5.31*
	(0.96)	(1.09)
Adjusted R^2	0.18	0.22
N	325	325

Notes: Dependent variable for the regression analysis is the number of occurrences of the word "unemployment" per 10,000 words in Federal Reserve transcripts.

Significance levels: * $p < .05$, two-tailed *t*-test